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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,472	08/29/2001	Katsuji Kimura	Q65962	4891

7590 05/09/2002

SUGHRUE, MION, ZINN, MACPEAK & SEAS
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Washington, DC 20037

EXAMINER

NGUYEN, MINH T

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 05/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,472

Applicant(s)

KIMURA, KATSUJI

Examiner

Minh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 5-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's response to the restriction requirement has been received and entered in the case. The following is a detailed Office Action of the elected claims 1-4.

Drawings

2. Figures 17-19 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it uses word which can be implied, i.e., "comprises", line 1. Correction is required. See MPEP § 608.01(b).

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not have proper antecedent basis for the recited constant current source" recited in claim 4, i.e., it is unclear where to locate the recited constant current source in the drawings.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the claim is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the elements and structures to generate the recited subtraction output signal and the elements and structures to generate the recited addition output voltage are not seen in the claim.

As per claim 2, this claim is rejected because of the indefiniteness of claim 1.

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As per claim 3, the claim is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the elements and structures to generate the recited subtraction output signal and the elements and structures to generate the recited addition output voltage are not seen in the claim.

As per claim 4, this claim is rejected because of the indefiniteness of claim 3.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,602,509, issued to Kimura.

As per claim 1, Kimura discloses a voltage subtractor/adder circuit (Fig. 1) comprising:
a differential pair (transistors M56 and M57) having a first MOS transistor M56 and a second MOS transistor M57, wherein the gate electrodes of the first and second MOS transistors forming input terminals, i.e., the gate terminals of M56 and M57, for receiving an input differential voltage (V1-V2), the drain electrodes forming output terminals to the subtractor circuit 3 (M51-M54) for outputting a subtraction output signal i, and source electrodes of M56 and M57 coupled to form an output terminal B for addition output voltage (the voltage at node B); and

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the limitation recited on the last three lines is met as described in column 2, line 22.

As per claim 2, the recited level shifter for level shifting the addition output voltage reads on transistor M55 (column 2, lines 52-55).

As per claim 3, Kimura discloses a voltage subtractor/adder circuit (Fig. 1) comprising:
a differential pair (transistors M56 and M57) having a first MOS transistor M56 and a second MOS transistor M57, wherein the gate electrodes of the first and second MOS transistors forming input terminals, i.e., the gate terminals of M56 and M57, for receiving an input differential voltage (V_1-V_2), the drain electrodes forming output terminals to the subtractor circuit 3 (M51-M54) for outputting a subtraction output signal i , and source electrodes of M56 and M57 coupled to form an output terminal B for addition output voltage (the voltage at node B); and

a constant current source (M58 and M59) which drives the differential pair (M56 and M57).

As per claim 4, the recited level shifter for level shifting the addition output voltage reads on transistor M55 (column 2, lines 52-55).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 5,381,113 to Kimura discloses an adder/subtractor circuit (Fig. 9) which includes a differential pair $M5''$ and $M6'$, differential input V , subtractor signal I and adder voltage (at the sources of $M5''$ and $M6''$).

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US Patent No. 5,594,383 to Tamba discloses an adder/subtractor circuit (Fig. 1) which includes a differential pair M3 and M4, differential input (VIN+-VIN-), subtractor signal Iout and adder voltage N2.

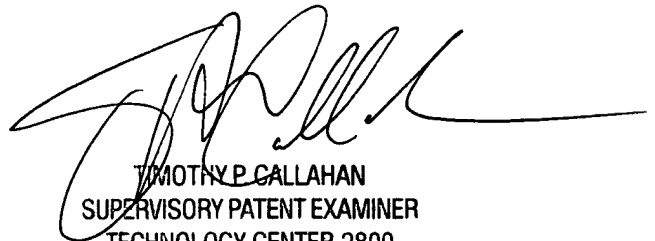
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is 703-306-9179. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

my

MN
April 30, 2002


TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800